

**Notice of Allowability**

Application No.

09/724,803

Examiner

Alessandro V. Amari

Applicant(s)

CAPPIELLO ET AL.

Art Unit

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/28/2004.
2. ☒ The allowed claim(s) is/are 35-39,46-64,101-105 and 112-131.
3. ☒ The drawings filed on 28 November 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

### **REASONS FOR ALLOWANCE**

1. Claims 35-39, 46-64, 101-105 and 112-131 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Claims 35 and 146 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 80% for all polarization states over at least one of the C-band and L-band wavelengths" as set forth in the claimed combination. Claims 36-39 are also allowable based upon their dependence on claim 35.

Claims 46 and 147 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 60% for all polarization states over the C-band wavelength range" as set forth in the claimed combination. Claims 47-50 are also allowable based upon their dependence on claim 46.

Claims 51 and 148 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 70% for all polarization states over the C-band wavelength range" as set forth in the claimed combination. Claims 52-55 are also allowable based upon their dependence on claim 51.

Claims 56 and 149 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 60% for all polarization states over at least one of the C-band and L-band wavelengths" as set forth

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in the claimed combination. Claims 57-60 are also allowable based upon their dependence on claim 56.

Claims 61 and 150 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 60% for all polarization states over the C-band wavelength range" as set forth in the claimed combination. Claims 62-64 are also allowable based upon their dependence on claim 61.

Claim 101 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 80% for all polarization states over at least one of the C-band and L-band wavelengths" as set forth in the claimed combination. Claims 102-105 are also allowable based upon their dependence on claim 101.

Claim 112 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 60% for all polarization states over the C-band wavelength range" as set forth in the claimed combination. Claims 113-116 are also allowable based upon their dependence on claim 112.

Claim 117 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 70% for all polarization states over the C-band wavelength range" as set forth in the claimed combination. Claims 118-121 are also allowable based upon their dependence on claim 117.

Claim 122 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 60% for all polarization states over at least one of the C-band and L-band wavelengths" as set forth in the claimed combination. Claims 123-126 are also allowable based upon their dependence on claim 122.

Claim 127 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "has an efficiency of at least 60% for all polarization states over the C-band wavelength range" as set forth in the claimed combination. Claims 128-131 are also allowable based upon their dependence on claim 127.

The prior art of record, Hoose teaches a diffraction grating comprising a reflective material with multiple gratings having blazed surfaces and an optically transmissive material disposed adjacent the reflective material and having an index of refraction wherein the reflective material has a number of grooves per millimeter. However, the prior art does not teach that a diffraction grating has the claimed efficiencies for all polarization states over the C-band and L-band wavelength ranges as evidenced in Figures 2-7 of the disclosure and there is no motivation or teaching to modify this difference as derived.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571) 272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava (IV4)  
13 September 2004

  
MARK A. ROBINSON  
PRIMARY EXAMINER